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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/390,228	09/03/1999	MAYUMI UNO	10873.274US11	6547

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MINNEAPOLIS, MN 55402-0903

EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

16

DATE MAILED: 05/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-5

Office Action Summary

Application No.

09/390,228

Applicant(s)

UNO ET AL.

Examiner

Martin J Angebranndt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29,31,50-64,74 and 75 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29,31,50-64,74 and 75 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1 The response provided by the applicant has been read and given careful consideration. Responses to the arguments offered by the applicant are presented after the first rejection to which they are directed. The terminal disclaimer is proper and has been entered and obviates the provisional double patenting rejection of record. The citation of Penn Yan Boats, Inc V. Sea Lark Boats, Inc was merely to bring the liability of large IDS submissions to the applicant's attention.

2 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3 Claims 1-29,31,50-64 and 74-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka et al. '363, in view of Yoshioka et al. JP 04-052188 and either of Yoshitomi et al. JP 63-171453, Kinou et al. JP 03-248338, JP 01-276453 or Shino et al. JP 05-274726.

Yoshioka et al. '363 in figure 3, shows a substrate, a 160 nm SiO₂-ZnS dielectric layer, GeTeSb nitride surface layer (20), an SbGeTe recording layer, a second 20 nm SiO₂-ZnS dielectric layer, a, Al reflective layer and a protective layer. This is provided on at least one of the recording layer surfaces. (7/8-34)

Yoshioka et al. JP 04-052188 in the example on page 4 is a substrate, a dielectric layer, an SbGeTe recording layer, a GeN layer, a second dielectric layer and a reflective layer.

Yoshitomi et al. JP 63-171453. in the examples described with respect to the table on page 3. Note the use of GeN, GeAlN and GeZrN in page 3. note that the examiner holds that the substrate is an adjacent layer. Zr is a IVa metal according to the periodic table used by the applicants in the specification and is recited in claims 1 and 31 along with Al and these claims are also open to the addition of other elements in the barrier layer due to the language used.

Kinou et al. JP 03-248338 in the examples described in the abstract. The use of GeSiZrN in the examples and in the abstract. Zr and Si are recited in claims 1 and 31 and Zr is embraced by the groups of claim 50.

JP 01-276453 in the examples described in the abstract. The use of GeSiN in the examples and in the abstract.

Shindo et al. JP 05-274726 in the examples described in the abstract. The use of GeSiNH in the examples on page 15 and in the abstract

In addition to the basis above, it would have been obvious to include additives, such as Al, Si, and Zr, in the GeN protective layers of the invention of Yoshioka et al. '363 as modified by Yoshioka et al. JP 04-052188, based upon the disclosure of equivalent function as protective layers within either of Yoshitomi et al. JP 63-171453, Kinou et al. JP 03-248338, JP 01-276453 or Shino et al. JP 05-274726 and particularly the strong showing of equivalence by Yoshitomi et al. JP 63-171453.

In the analysis of the Yoshioka et al. '363, the applicant ignores the nitride surface layer of the GeTeSb recording layer. This is considered to meet the barrier layer limitation of the claims. The Yoshioka et al. JP 04-052188 is applied to evidence that this would be desirable on the topside of the recording medium as well as below the recording layer as evidenced by Yoshioka et al. '363 therefore rendering it obvious to provide a GeN layer on both sides of the recording layer. The examiner notes that the Yoshitomi et al. JP 63-171453, Kinou et al. JP 03-248338, JP 01-276453 and Shino et al. JP 05-274726 are each analogous art as they concern

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laser recording media with metallic recording layers and therefore they are considered to be relevant to the issues of protection of the recording layer, thereby rendering the addition of Si, Al and/or Zr obvious to one skilled in the art.

The applicant argues that the magneto-optical recording media are from a non-analogous art as they use the Kerr effect in recording. The examiner notes that the Kerr effect is measured using optical techniques and notes that the media are recorded and read optically. The examiner further notes that as these are optically recordable media they are analogous and the motivation for using protective layers is the same as in other optically recordable media. The examiner notes that the JP 03-248338 attributes improved temperature and humidity resistance to the protective layer, the JP 01-276453 attributes reduced stress cracking to the protective layer, Jp 63-171453 describes longer recording layer life, Shindo et al. JP 05-274726 describes improved long term reliability and easy protective film formation and JP 04-069833 teaches improved stability. All of these improvements would also be desirable in other optically recordable media and in each case, the layer is directly adjacent to the recording layer. Therefore one skilled in the art would only substitute these for the GeN or GeNO layers of the primary references, rather than other layers, particularly in view of the similarity in their composition. The issue of being adjacent to the substrate is to make it clear that these are in a position to act as barrier layer to prevent materials from passing through them, such as water, oxygen, residual solvents or the like, from other layers. The rejection stands

In response to the arguments of 02/28/02, the position of the examiner in terms of claims interpretation is clear for the record and the dielectric layers of Yoshioka et al. '363 and Yoshioka et al. JP 04-052188 are exactly those disclosed on page 20 at line 11-16 of the instant

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specification as the protective layer materials and notes that the nitrided layers of these references are disclosed as being between the recording layer and the protective/dielectric layer in the Yoshioka et al. '363 and Yoshioka et al. JP 04-052188 references. The examiners position is that it would have been obvious to use similar layers to the GeN layers of Yoshioka et al. '363 and Yoshioka et al. JP 04-052188, such as those of Yoshitomi et al. JP 63-171453, Kinou et al. JP 03-248338, JP 01-276453 or Shino et al. JP 05-274726 in place of the GeN layers for these references with a reasonable expectation of these acting in a similar manner does to their disclosed use within the optical recording media art and their chemical similarity. The examiner has considered the data available in the specification and notes that there is no benefit disclosed which is commensurate with the scope of the coverage sought. The examiner notes that the data in table 9 evidences the equivalence of GeN layers for nitrogen levels of 10 and 20 % and does not provide a basis for unobvious results. The same can be said for tables 11-13. Table 14 evidences no difference for nitrogen levels of 10% in GeONX layers. The applicant may wish to consider this data when formulating the next amendment. The rejection stands. Yoshitomi et al. JP 63-171453, Kinou et al. JP 03-248338, JP 01-276453 or Shino et al. JP 05-274726.

4 **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


5 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Angebrannt whose telephone number is (703) 308-4397.

I am normally available between 7:30 AM and 5:00 PM, Monday through Thursday and 7:30 AM and 4:00 PM on alternate Fridays.

If repeated attempts to reach me are unsuccessful, my supervisor may be reached at (703) 308-4552.

Facsimile correspondence should be directed to (703) 892-9311.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.



Martin J. Angebrannt
Primary Examiner, Group 1750
May 16, 2002